

TITLE: "Irrigation scheduling, freeze warning and soil salinity detecting"

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STATEMENT OF PROGRESS:

MSS digital magnetic tapes from A/C Mission 238 (5/29/73) were received 10/8/73. The 53 tapes are currently being reformatted for compatibility with local programs. About 45 minutes of computer time is required per tape. The data are from two flight lines in Cameron County and one line in Starr County, all flown at 10,000 ft AGL.

Range site characterization is in progress along the flight line in Starr County. The vegetation composition for 5 of the 7 range sites has been determined. The vegetation composition for the two remaining range sites will be completed and soil samples will be taken at all 7 sites to determine degree of soil salinity. The A/C and EREP MSS spectra from the 7 range sites will be used to train the computer to map the rangelands by range site and/or soil salinity categories along the flight line, and in the County if EREP data are useable (EREP data are rated marginal by JSC due to instrument misalignment).

The photomosaics of the two flight lines in Cameron County have been completed, and a visual survey has been made along the flight lines to determine where soil samples for salinity determination might best be taken in both farmed and indigenous vegetation areas. The native vegetation has also been inspected for indicators of saline soil. The soil will be sampled for salinity at the selected sites and the composition of the native vegetation will be determined. For ease of location in the space, data, effort has been made to select the training sites from fairly homogeneous ground areas 40 acres or larger in size. The training site data will be used to help establish soil salinity categories to attempt to map salt-affected soils. The EREP data will

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STATEMENT OF PROGRESS (Continued):

be obtained, hopefully, from SL-4; SL-2 was off course and clouds interfered during SL-3. If SL-4 data are not obtained, the aircraft data can be studied.

In both Cameron and Starr Counties the boundaries of the soil associations as indicated on the generalized soil maps for the counties have been considered so that sampling sites would be chosen that represent the major soil types that occur along the aircraft flight lines.

The 5 seconds of EREP S-192 MSS data, representing an area approximately 20 miles by 40 miles on the ground, from the May 30 overpass over Starr County that has been expected for some time has still not been delivered. We have been asked to evaluate it within 30 days after it is delivered for its capability to perform our experiment and prior to ordering any additional EREP S-192 data. A flurry of activity will be necessary to meet that deadline. Since the aircraft and spacecraft data were collected only one day apart, we will seek the answer through a comparison of the (a) spectra, (b) signal characteristics, and (c) classification results for A/C and EREP MSS data from the ground-truthed training sites and short segments of the aircraft flight lines.